INSTALLATION RESTORATION PROGRAM

LANDFILL LF-023 SOURCE CONTROL PROPOSED REMEDIAL ACTION PLAN

PLATTSBURGH AIR FORCE BASE PLATTSBURGH, NEW YORK

DRAFT FINAL

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1.0 INTRODUCTION

The U.S. Air Force is proposing a remedial action plan, referred to as the preferred alternative, to address Landfill LF-023 contaminant source control (i.e., soil and landfilled waste) as part of Installation Restoration Program (IRP) activities at Plattsburgh Air Force Base (AFB) (Figure 1). This **Proposed Remedial Action Plan (PRAP)** recommends a method of addressing contaminated source material associated with Landfill LF-023.

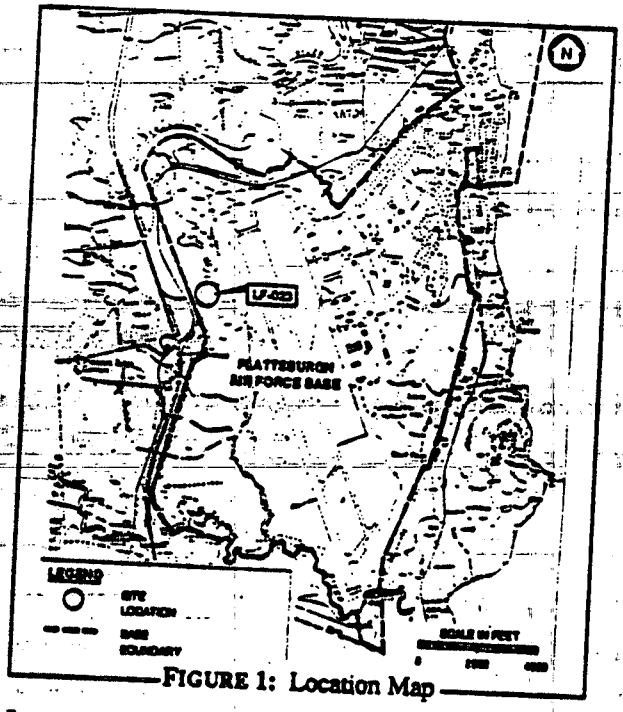

FIGURE 1: Location Map

In accordance with Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, Plattsburgh AFB is publishing this PRAP before selecting a final remedy to provide an opportunity for public review and comment on the remedial alternatives being considered for the site. Plattsburgh AFB, in consultation with the U. S. Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC), will consider public comments as part of selecting the remedial alternative for LF-023 source control. The PRAP summarizes the results and conclusions of the remedial alternatives evaluated during the **Feasibility Study (FS)**. *Technical terms are highlighted in bold print and defined in the enclosed glossary.*

This PRAP addresses source contamination believed to originate from previous waste disposal activities at Landfill LF-023 (Figure 2). Landfill LF-023, reportedly active from 1966 to 1981, primarily received domestic wastes and construction debris. A **Remedial Investigation (RI)** conducted at LF-023 identified site contaminants in surface soils and groundwater, and in surface water and sediment from seeps south of the landfill. This PRAP considers the effect source control alternatives will have on contaminants in groundwater, surface water, and sediment.

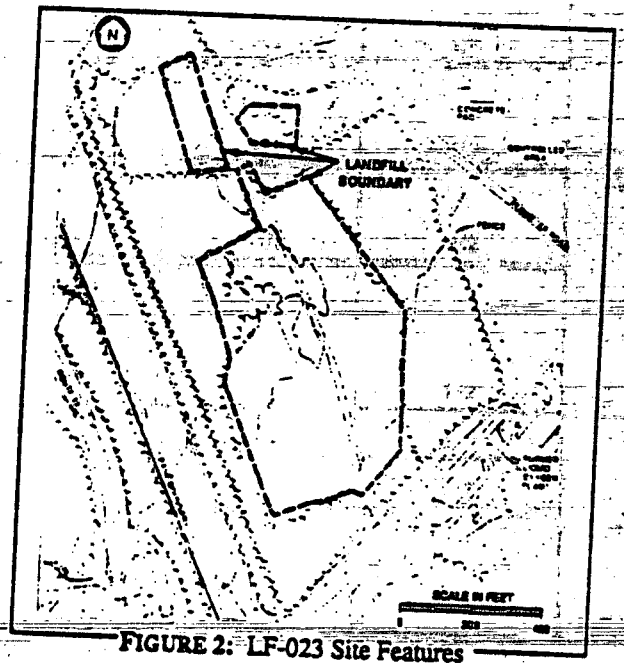

FIGURE 2: LF-023 Site Features

Plattsburgh AFB's preferred remedial alternative includes institutional controls, installing a low-permeability cover system over the landfill and conducting a long-term monitoring program to monitor groundwater and surface water quality. This cover system and monitoring program would meet the relevant and appropriate requirements of Part 360 of the New York State Solid Waste Management Facility Rules for closure and post-closure of solid waste landfills (hereinafter referred to as Part 360). The preferred alternative is described in greater detail in Section 6.0 of this document.

To help the public participate in reviewing the remedial options for the site, this document includes information about where interested citizens can find more detailed descriptions of the remedy selection process and the source control alternatives being considered for Landfill LF-023.

2.0 THE PUBLIC'S ROLE IN EVALUATING REMEDIAL ALTERNATIVES

Plattsburgh AFB is conducting a 30-day public comment period, from July 21, 1992 to August 20, 1992, to solicit input to the final remedial alternative decision. During this comment period, the public is invited to review and comment on this PRAP, the Landfill LF-023 Source Control FS report, and the LF-023 RI report available at the location listed below.

Plattsburgh Public Library
15 Oak Street (corner of Oak and Brinkerhoff)
Plattsburgh, NY 12901
(518) 563-0921

Library Hours:
Monday, Wednesday, and Thursday: 9 a.m. to 8 p.m.
Tuesday, Friday, and Saturday: 9 a.m. to 5 p.m.

Repository documents are on reserve (see the Reference Librarian) and photocopying equipment is available.

2.1 PUBLIC INFORMATIONAL MEETING AND PUBLIC HEARING

Plattsburgh AFB will hold a public informational meeting on Tuesday July 21, 1992 at 7:00 p.m., at the Plattsburgh Air Force Base Hospital, located in Plattsburgh, New York, to describe the preferred alternative and other alternatives evaluated in the FS. The public is encouraged to attend the meeting to hear the presentations and ask questions. Immediately afterward, Plattsburgh AFB will also hold a formal public hearing to accept spoken comments on the remedial alternatives being considered for Landfill LF-023 source control. This hearing will provide the opportunity for formal comment on the remedial plan. Comments will be recorded and transcribed, and a copy of the transcript will be added to the **Administrative Record** available at Plattsburgh AFB.

2.2 WRITTEN COMMENTS

If you would like to comment in writing on Plattsburgh AFB's preferred alternative, any of the other remedial alternatives, or other issues relevant to the site remediation, please deliver your comments to Plattsburgh AFB's IRP Public Affairs Coordinator at the Public Hearing or mail your written comments (postmarked no later than August 20, 1992) to:

IRP Public Affairs Coordinator
380 ARW/PA
Building 100
Plattsburgh AFB, NY 12903-5000
(518) 565-7006

2.3 PLATTSBURGH AFB'S REVIEW OF PUBLIC COMMENT

Plattsburgh AFB will consider public comments as part of the process of reaching a final decision on the most appropriate remedial alternative for LF-023 source control. Plattsburgh AFB's final choice will be issued in a **Record of Decision (ROD)** for the site and submitted to USEPA and NYSDEC for review, approval, and signature. A Responsiveness Summary, summarizing public comments and Plattsburgh AFB's responses to the comments, will be issued with the ROD. Once the ROD is signed, it becomes part of the Administrative Record.

3.0 BASE AND SITE HISTORY

Plattsburgh AFB is located in northeastern New York State, bordered on the north by the City of Plattsburgh and on the east by Lake Champlain. Plattsburgh AFB has initiated activities to identify, evaluate, and clean up sites associated with suspected releases of toxic and hazardous materials as part of the Department of Defense's (DOD)

IRP. On November 21, 1989, Plattsburgh AFB was included on the National Priorities List of hazardous waste sites to be remediated under the direction of USEPA.

3.1 SITE HISTORY

Landfill LF-023, approximately 500 feet wide and 800 feet long, is on the western side of Plattsburgh AFB, approximately 300 feet from the base boundary. This last active landfill at Plattsburgh AFB reportedly received domestic wastes for disposal from 1966 to 1981. Daily operations consisted of digging trenches up to 25-feet deep, spreading and compacting trash (typically bagged household garbage), and backfilling with a 6-inch layer of sandy soil. Hazardous wastes were not routinely disposed of in this landfill; however, hazardous materials might have been deposited. Since operations ceased, vegetation has begun to cover LF-023 and an exercise training course has been constructed in the northern section of the site.

Several site investigations were conducted at LF-023. A Preliminary Assessment identified whether the site was potentially contaminated. Based on the Preliminary Assessment, a Site Inspection (SI) confirmed the presence of contamination. SI activities included soil, waste, and groundwater sampling. The SI indicated the presence of vinyl chloride and other volatile organic compounds (VOCs) in groundwater east and southeast of the landfill. Dichlorobenzene was detected in one waste sample from the site.

3.2 RESULTS OF THE REMEDIAL INVESTIGATION

An RI was conducted in the fall of 1989 to characterize the nature and extent of contamination at LF-023, with supplemental sampling during the fall of 1990. RI activities included groundwater, surface soil, sediment, and surface water sampling.

3.2.1 Landfill Depth and Areal Extent

LF-023 has a surface area of approximately 438,000 square feet. Although the areal extent of the landfill has been defined and its depth is known in some locations, the volume of fill material is difficult to estimate because of the nonuniform manner in which wastes were disposed. Based on the areal extent of the landfill and a maximum depth of 25 feet, the maximum volume of fill in LF-023 would be approximately 406,000 cubic yards.

3.2.2 Nature and Extent of Contamination

Surface and subsurface soil, groundwater, sediment, surface water, and waste samples were collected for chemical analysis to evaluate the nature and extent of LF-023 contamination (see Table 1). Contaminants were detected in surface soils, groundwater, waste, sediment, and surface water. No site contaminants were detected in subsurface soil. Semivolatile organic compounds (SVOCs), all of which are polynuclear aromatic hydrocarbons (PAHs), silver, and polychlorinated biphenyls (PCBs) were identified as site surface soil contaminants. One waste sample contained 1,2-dichlorobenzene. Groundwater site contaminants include four inorganic compounds, six VOCs, and one SVOC. Aluminum, arsenic, iron, and zinc are considered surface water contaminants, and petroleum hydrocarbons were detected in the sediment samples.

4.0 SUMMARY OF SITE RISKS

A baseline risk assessment was conducted as part of the RI to evaluate whether site contaminants in groundwater, surface water, sediment, surface soils, and waste material pose a risk to humans and/or ecological receptors. The human health risk assessment considered four current and four potential future exposure scenarios for LF-023. All current human health risks were estimated to be within acceptable USEPA risk limits. Three potential future human health risks estimated to be above USEPA acceptable risk limits must be addressed through remedial activities: (1) exposure to vinyl chloride in groundwater, (2) exposure to carcinogenic PAHs in site surface soil, and (3) inhalation of vapor and dusts from landfill surface soil. This PRAP addresses potential future human health exposures to surface soil; potential future human health exposures to groundwater will be addressed in a separate FS and PRAP.

The ecological risk assessment indicated that current and future effects to terrestrial wildlife may occur from exposure to surface soil contaminants. Additionally, toxic effects on aquatic organisms in the wetland south of the site may occur. This PRAP addresses ecological risks associated with surface soil exposures. Potential ecological effects on aquatic organisms in the wetland will be addressed in a separate FS and PRAP.

As discussed, this PRAP only addresses source control for LF-023. Groundwater, surface water, and sediment will be addressed in separate FS and PRAP reports. If the preferred source control alternative is not implemented, potential future human health risks and current and potential future ecological risks associated with surface soil exposure would not be reduced.

5.0 PROPOSED REMEDIAL OBJECTIVES

Using information gathered during the RI, Plattsburgh AFB identified remedial response objectives for LF-023. These include:

1. Minimize potential future human health and current and future ecological risks associated with exposure to PAHs in surface soil

2. Minimize potential human health risks associated with exposure to vinyl chloride in groundwater should there be a resident downgradient of LF-023 sometime in the future

3. Minimize potential human health risks associated with exposure to PAHs in dust emissions should there be a receptor (i.e., resident) living downgradient of LF-023 in the future

4. Minimize potential for risks to aquatic organisms associated with exposure to inorganics in wetland surface water downgradient of LF-023

5. Minimize infiltration of precipitation into landfilled waste materials

6. Minimize potential for contaminant migration from waste materials

7. Minimize erosion of existing cover soils

As discussed, remedial response objectives 2 and 4 will be addressed in a separate FS and PRAP.

6.0 PLATTSBURGH AFB'S PREFERRED ALTERNATIVE

Plattsburgh AFB's preferred alternative (i.e., Installation of a Low-Permeability Barrier Cover System; designated as Alternative 3 in the FS report and herein) consists primarily of a low-permeability cover system to achieve the response objectives identified in Section 5.0. LF-023 source control would be as follows:

Existing vegetation such as trees and brush would be cleared, grubbed, chipped and removed from the site. The cleared site would be regraded to control rainwater runoff and minimize erosion. The installation of a gas detection system around the landfill would be used to monitor for the presence and migration of methane and other landfill gases after closure of LF-023. A gas management system also would be part of the landfill cover including venting pipes between a gas-venting soil layer and the cover system surface.

The cover's barrier layer would be constructed of low-permeability soil (i.e., a recompacted, fine-grained soil that is difficult for rainwater to penetrate) or a synthetic liner to keep rainwater or snowmelt from infiltrating the landfill. The low-permeability barrier layer is covered by a soil barrier protection layer to protect the barrier layer from frost or root penetration. Six inches of topsoil would be placed on top of the barrier protection layer to plant grass, which will minimize soil erosion and enhance evapotranspiration.

A post-closure plan will be developed specifying the inspection, monitoring, and maintenance programs for the closed landfill to be continued for 30 years. These post-closure activities will be subject to five-year site reviews as required by the National Oil and Hazardous Substance Pollution

Contingency Plan (NCP) when contamination remains at a site.

Estimated Time for Construction: 4 months

Estimated Time of Operation: 30 years

Estimated Capital Cost: $3,586,000

Estimated Operation and Maintenance Costs (30 years, net present worth): $988,000

Estimated Total Cost (30 years, net present worth): $4,574,000

7.0 OTHER ALTERNATIVES

The public is also invited to comment on the other two alternatives that Plattsburgh AFB evaluated.

Each alternative is briefly described below. More detailed descriptions can be found in the FS report.

7.1 NO ACTION

The No Action Alternative (Alternative 1) provides a baseline against which the other alternatives can be compared, and also assesses the effects on human health and the environment if no remedial actions are taken. The No Action Alternative includes a program to monitor the status of groundwater and surface water quality, with five-year reviews to evaluate how human health and the environment are protected. This monitoring program would comply with Part 360 requirements for long-term monitoring. The No Action Alternative would not meet the remedial response objectives.

Estimated Time for Construction (installation of a groundwater monitoring well): 3 days

Estimated Time of Operation: 30 years

Estimated Capital Cost: $9,000

Estimated Operation and Maintenance Costs (30 years, net present worth): $784,000

Estimated Total Cost (30 years, net present worth): $793,000

7.2 SITE GRADING AND VEGETATION ESTABLISHMENT FOR CLOSURE

This alternative (Alternative 2) is similar to the preferred alternative except that the cover system would consist only of a soil cover (i.e., no low-permeability layer) to support grass growth and reduce precipitation infiltrating to buried wastes. The alternative would be as follows:

1. Clearing and grubbing of the site
2. Surface water runoff management to minimize erosion of the cover and minimize maintenance requirements
3. Soil cover installation
4. Vegetation establishment to minimize erosion of the final cover and enhance evapotranspiration
5. Post-closure plan development to monitor, maintain, and inspect the site
6. Groundwater and surface water monitoring
7. Five-year site reviews

This alternative would only slightly reduce the infiltration of precipitation through the wastes, and therefore would not eliminate the potential for contaminant migration from wastes to groundwater.

Estimated Time for Construction: 3 months

Estimated Time of Operation: 30 years

Estimated Capital Cost: $987,000

Estimated Operation and Maintenance Costs (30 year, net present worth): $988,000

Estimated Total Cost (net present worth): $1,975,000

8.0 SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

For hazardous waste sites remediated under CERCLA, the USEPA requires that remedial alternatives be evaluated using nine criteria. These nine criteria are used to select a remedy that meets the national Superfund program goals of protecting human health and the environment, maintaining long-term protection, and minimizing untreated waste.

8.1 OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

This criterion addresses how an alternative will protect human health and the environment. This includes an assessment of how human health and environmental risks are properly eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Alternatives 2 and 3 (i.e., the preferred alternative) would both minimize the potential human and ecological risks associated with surface soil exposures. Alternative 2 would reduce but not eliminate precipitation infiltrating to the wastes; consequently, the potential for contaminant migration from waste material to groundwater would not be minimized. Alternative 3 would minimize the infiltration of precipitation, thereby reducing the potential for contaminant migration from the waste material to groundwater. Alternative 1, the No Action Alternative, would not include any measures to protect human health or the environment.

8.2 COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses whether or not a remedy complies with state and federal environmental and public health laws and requirements that apply or are relevant and appropriate to the conditions and remedial options at a specific site.

Alternative 3 would comply with Part 360 requirements for final cover systems governing landfill closure. Alternative 2 would comply with some but not all Part 360 requirements. Alternative 1 would not comply with Part 360 regulations for landfill closure.

8.3 LONG-TERM EFFECTIVENESS AND PERMANENCE

Long-term Effectiveness and Permanence refers to the ability of an alternative to maintain reliable protection of human health and the environment over time once remedial goals are met.

Alternative 3 would provide the greatest long-term effectiveness by (1) reducing potential human health and ecological risks associated with surface soil exposures, (2) significantly reducing the infiltration of precipitation through the cover system, and (3) reducing the net leachate discharge to the wetland. Alternative 2 would not effectively reduce the potential for contaminant migration to groundwater because only a slight reduction of infiltration through the cover system is expected. Alternative 1 would provide the least long-term protection because it would not meet any remedial response objectives.

8.4 REDUCTION OF TOXICITY, MOBILITY, OR VOLUME OF CONTAMINANTS THROUGH TREATMENT

Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment are three principal measures of the overall performance of an alternative. This criterion essentially does not apply to the source control alternatives evaluated for LF-023 because treatment would not be employed as a principal element. Treatment is a statutory preference under CERCLA; however, cover systems are often more appropriate for landfill sites such as LF-023.

8.5 SHORT-TERM EFFECTIVENESS

Short-term Effectiveness refers to the likelihood of adverse impacts on human health or the environment during the construction and implementation of an alternative until remedial goals are achieved.

No short-term impacts are anticipated for Alternative 1 because remedial alternatives would not be implemented. Alternatives 2 and 3 would result in similar direct short-term impacts to potential ecological receptors from clearing and grubbing activities. These impacts would be mitigated by staggering the mowing of the cover system. This would provide a more diverse plant community and more food sources and protective cover for terrestrial wildlife than frequently mowed grass. Alternative 2 could potentially mitigate direct ecological impacts more effectively because trees and shrubs could be planted in addition to mowing the grassed cover system. Trees and shrubs could not be planted as a mitigative measure for Alternative 3 because plant roots could potentially reduce the integrity of the low-permeability barrier cover system.

8.6 IMPLEMENTABILITY

Implementability refers to the technical and administrative feasibility of an alternative, including the availability of materials and services needed to implement the alternative.

The implementability of Alternatives 2 and 3 would be similar; however, a suitable borrow source for the low-permeability hydraulic barrier material must be identified before implementation of Alternative 3, unless a synthetic liner would be used instead. Alternative 1 would be readily implementable because no remedial actions would be conducted.

8.7 COST

Cost includes both the capital (up-front) cost of implementing an alternative and the costs associated with annual operation and maintenance of the alternative over the long term, expressed in terms of the **net present worth** of the alternative over its period of performance (i.e., 30 years).

Alternative 1 would be the least expensive because it would involve no remedial actions. Alternative 3 would be the most costly of the two cover system alternatives; however, the increased cost is associated primarily with the hydraulic barrier cover materials required by Part 360.

8.8 STATE ACCEPTANCE

State Acceptance addresses whether, based on its review of the FS and PRAP, the state concurs with, opposes, or has no comment on the alternative Plattsburgh AFB proposes as its remedy for the site.

8.9 COMMUNITY ACCEPTANCE

Community Acceptance addresses whether the public concurs with Plattsburgh AFB's PRAP. Community acceptance of this PRAP will be evaluated based on comments received at the public meetings and during the public comment period. As discussed, the responses to public comments will be addressed in a Responsiveness Summary that will be part of the ROD documenting the selected remedial alternative for LF-023 source control.

8.10 SUMMARY

Of the nine criteria, Overall Protection of Human Health and the Environment and Compliance with ARARs are considered threshold requirements that must be met by all remedies. Plattsburgh AFB then balances its consideration of alternatives against the following five evaluation criteria: (1) long-term effectiveness and permanence; (2) reductions of toxicity, mobility, or volume through treatment; (3) short-term effectiveness; (4) implementability; and (5) cost. State and community concerns are considered as modifying criteria factored into a final balancing of all criteria to select a remedy. Consideration of state and community comments may prompt Plattsburgh AFB to modify aspects of the preferred alternative or decide that another alternative provides a more appropriate balance.

9.0 RATIONALE FOR PROPOSING THE PREFERRED ALTERNATIVE

Based on current information and analysis of the FS report, Plattsburgh AFB believes that the preferred alternative for LF-023 source control is consistent with the requirements of the Superfund law and its amendments, specifically Section 121 of CERCLA, and to the extent practicable, the NCP. Alternative 3 would (1) provide overall protection of human health and the environment; (2) comply with ARARs (e.g., NYSDEC Part 360 landfill closure requirements); (3) provide long-term effectiveness and permanence, and (4) have the greatest effect on reducing the potential for contaminants from the landfill.

GLOSSARY

Administrative Record: A file established and maintained in compliance with Section 113(K) of CERCLA consisting of information upon which the lead agency bases its final decisions on the selection of remedial method(s) for a Superfund site. The Administrative Record is available to the public.

Applicable or Relevant and Appropriate Requirements (ARARs): ARARs include any State or Federal statutes or regulations that pertains to protection of public health and the environment in addressing certain site conditions or using a particular remedial technology at a Superfund site. A State law to preserve wetland areas is an example of an ARAR. USEPA must consider whether a remedial alternative meets ARARs as part of the process for selecting a remedial alternative for a Superfund site.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The act requires federal agencies to investigate and remediate abandoned or uncontrolled hazardous waste sites.

Cover System: A multi-layer capping system typically used for closure of landfills. The cover system usually consists of soil materials, sometimes in combination with synthetic materials, one or more of which reduce the flow of water through the cap. The cover system is graded to promote runoff of rainfall and snowmelt away from the landfill.

Dichlorobenzene: Any of a group of substitution products of benzene and two atoms of chlorine; used as a germicide, insecticide, or chemical intermediate.

Ecological Receptors: Fauna in a given area that could be affected by contaminants in surface soils, surface water, and/or sediment (e.g., mammals, birds, reptiles, fish).

Evapotranspiration: Total water loss from soil, including direct evaporation and transpiration from plants.

Feasibility Study (FS): A report that presents the development and analysis of remedial alternatives that USEPA considers for the remediation of Superfund sites.

Five-year Site Reviews: Reviews of ongoing monitoring, inspection, and maintenance programs conducted at five-year intervals. Five-year site reviews are required by CERCLA for remedial actions that result in hazardous substances, pollutants, or contaminants remaining at the site.

Groundwater: Water found beneath the earth's surface that fills pores between materials such as sand, soil, gravel and cracks in bedrock and often serves as a principal source of drinking water.

Grubbing: To clear by digging up roots and stumps.

Inorganic Compounds: A class of naturally occurring compounds that includes metals, cyanide, nitrates, sulfates, chlorides, carbonate, bicarbonate, and other oxide complexes.

Installation Restoration Program (IRP): The IRP is the U.S. Air Force subcomponent of the Defense Environmental Restoration Program (DERP) that specifically deals with investigating and remediating sites from past activities associated with suspected releases of toxic and hazardous materials. The DERP was established to clean up hazardous waste disposal and spill sites at Department of Defense facilities nationwide.

Institutional Controls: Limitations such as deed or zoning restrictions established to restrict use of a contaminated area and reduce the potential for exposure (e.g., deed restrictions to prevent the future installation of drinking water wells at a site with contaminated groundwater).

Long-term Monitoring: Collecting and analyzing environmental samples from specific media (e.g., surface soils, sediments, surface water, groundwater, and/or air) to monitor quality according to a specified schedule and duration, such as a 30-year period.

Low-Permeability: Permeability is the property of soil that measures the ability of water to pass through. Therefore, a limited amount of water would pass through a low-permeability soil.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The NCP provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants. The NCP is applicable to response actions taken pursuant to the authorities under CERCLA and the Clean Water Act.

National Priorities List: USEPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under Superfund.

Net Present Worth: The amount of money necessary to secure the promise of future payment, or series of payments, at an assumed interest rate.

Petroleum Hydrocarbons (PHCs): The mixture of hydrocarbons and small amounts of other substances that make up petroleum. Hydrocarbons are chemical compounds consisting of carbon and hydrogen, and are found in gasoline, naphtha, and other products produced by refining processes.

Polychlorinated Biphenyls (PCBs): A group of organic chemicals used since 1926 in electric transformers as insulation and coolants, in lubricants, carbonless copy paper, adhesives, and caulking compounds. USEPA banned most uses of PCBs in 1979. PCBs are persistent in the environment because they do not break down to new and less harmful chemicals. If ingested by humans or animals, PCBs can be stored in fatty tissues. Acute and chronic exposure can cause liver damage. PCBs have also caused cancer in lab animals and have adversely affected the survival rates and reproductive success of fish.

Polynuclear Aromatic Hydrocarbons (PAHs): A group of organic chemicals typically formed during the combustion of hydrocarbon fuel, but can also exist naturally in the environment. PAHs are found in high concentrations in urban or industrial areas, or in the vicinity of airports. PAHs are relatively immobile in the environment. Some PAHs are

believed to cause cancer, while others have not been observed to produce adverse health effects.

Post-closure Plan: A plan specifying the maintenance, monitoring, and inspection activities to be conducted for a specified period at a hazardous waste site such as a landfill after it has been closed.

Preliminary Assessment: The first stage of the IRP process which is conducted to identify potential hazardous waste sites.

Proposed Remedial Action Plan (PRAP): A public document that solicits public input on a recommended remedial alternative to be used at a National Priorities List (NPL) site. The PRAP is based on information and technical analysis generated during the RI/FS. The recommended remedial action could be modified or changed based on public comments and community concerns.

Record of Decision (ROD): A public document that explains the remedial alternative to be used at a National Priorities List (NPL) site. The ROD is based on information and technical analysis generated during the RI/FS and on consideration of the public comments and community concerns received on the PRAP. The ROD includes a Responsiveness Summary of public comments.

Remedial Action: A long-term action that stops or substantially reduces a release or threat of a release of hazardous substances that is serious but not an immediate threat to human health or the environment.

Remedial Alternative: An option evaluated to address the source and/or migration of contaminants to meet health based remediation goals.

Remedial Investigation (RI): The Remedial Investigation determines the nature and extent and composition of contamination at a hazardous waste site, and assists in identifying appropriate remedial options for the FS.

Sediment: The sand or mud found at the bottom and sides of bodies of water, such as creeks, rivers, streams, lakes, swamps, and ponds. Sediments typically consist of soil, silt, clay, plant matter, and sometimes gravel.

Semi-volatile Organic Compounds (SVOCs): A group of chemical compounds having a molecular weight greater than 100. These compounds are heavier than and generally less volatile than VOCs. PAHs are SVOCs that occur naturally or are formed by the combustion of hydrocarbon fuel. Some SVOCs are believed to cause cancer.

Site Inspection (SI): The SI is the second stage of the IRP process which is conducted to confirm the presence or absence of contamination at a site.

Source: Area at a hazardous waste site from which contamination originates.

Superfund: CERCLA created a special tax that goes into a Trust Fund, commonly known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, USEPA either: 1) pays for site remediation when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work or 2) takes legal action to force parties responsible for site contamination to clean up the site or pay back the Federal government for the cost of the remediation. Federal Facilities are not eligible for Superfund monies.

Surface Water: Bodies of water on the surface of the earth, such as rivers, lakes, and streams.

Terrestrial Wildlife: Organisms living on land (e.g., reptiles, small mammals, small birds, predatory mammals, predatory birds).

Vinyl Chloride: A potentially carcinogenic, flammable, gaseous chemical compound used in producing some plastics.

Volatile Organic Compound (VOC): A group of chemical compounds composed primarily of carbon and hydrogen that are characterized by their tendency to evaporate (or volatilize) into the air from water or soil. VOCs include substances that are contained in common solvents (i.e., liquids capable of dissolving other liquids or solids to form

a solution) and cleaning fluids. Some VOCs are known to cause cancer.

Wetland: An area such as a marsh, bog, and swamp that is saturated with water long enough each year to affect the type of soil and vegetation found in the area. Wetlands are federally protected because they purify water, prevent floods, feed and shelter fish and wildlife, and offer recreational opportunities.

TABLE 1
LF-023 SITE CONTAMINANTS BY MEDIA

LF-023 SOURCE CONTROL RECORD OF DECISION
PLATTSBURGH AFB

DETECTION	CONCENTRATION RANGE[1] MINIMUM	MAXIMUM	FREQUENCY OF DETECTION[2]
GROUNDWATER (µg/L)			
METALS			
Aluminum	<200	662	2/16
Iron	<100	47,100	3/16
Manganese	<15	954	2/16
Potassium	<5,000	40,000	4/16
VOCs			
Chloroform	<0.2	0.4[4]	2/38
Vinyl Chloride	<0.3	31[5]	3/38
Chlorobenzene	<5	10	1/38
Benzene	<5	14	3/25
Ethylbenzene	<5	54	3/25
Xylenes (Total)	<5	72	4/25
SVOCs			
Naphthalene	<10	11	1/23
SURFACE SOILS[3] (concentrations in µg/kg unless otherwise noted)			
SVOCs			
Fluoranthene	<330	122,500	2/4
Naphthalene	<330	2,725	1/4
2-Methylnaphthalene	<330	2,125	1/4
Acenaphthene	<330	12,825	1/4
Dibenzofuran	<330	7,325	1/4
Phenanthrene	<330	144,000	1/4
Anthracene	<330	25,700	1/4
Pyrene	<330	105,500	2/4
Benzo(a)anthracene	<330	36,500	2/4
Chrysene	<330	35,000	2/4
Benzofluoranthene (Total)	<330	37,000	2/4
Benzo(a)pyrene	<330	21,200	2/4
Indeno (1,2,3-cd)pyrene	<330	4,650	1/4

continued

TABLE 1
LF-023 SITE CONTAMINANTS BY MEDIA

PLATTSBURGH AFB

DETECTION	CONCENTRATION RANGE[1] MINIMUM	MAXIMUM	FREQUENCY OF DETECTION[2]
Dibenzo(a,h)anthracene	<330	2,800	1/4
Fluorene	<330	12,325	1/4
Benzo(g,h,i)perylene	<330	3,850	1/4
PESTICIDES/PCBs			
PCB (Aroclor-1254)	<160	190	1/4
METALS (mg/kg)			
Silver	<2	12.8	2/4
SEDIMENT (mg/kg)			
PHCs	550	1,075	2/2
SURFACE WATER (ug/L)			
Aluminum	<200	1990	1/2
Arsenic	<10	316	1/2
Iron	<100	672,000	2/2
Zinc	<20	355	1/2
WASTE (ug/kg)			
SVOCs			
1,2-Dichlorobenzene	520	520	1/1

Notes:

1 Concentrations of duplicate samples were averaged. When a compound was detected in one duplicate and not the other, an average concentration was calculated by using the detection limit, adjusted for dilution.

2 Number of samples in which the compound was detected above background concentrations or appropriate standards divided by the total number of samples analyzed for that parameter. Duplicate samples were counted as one sample.

3 Concentrations detected in composite samples.

4 Concentrations reported from Method 8010 analyses.

5 Concentrations reported from CLP-COP and Method 8010 analyses.

VOC Volatile Organic Compound
SVOC Semivolatile Organic Compound
PCB Polychlorinated Biphenyl
PHC Petroleum Hydrocarbon